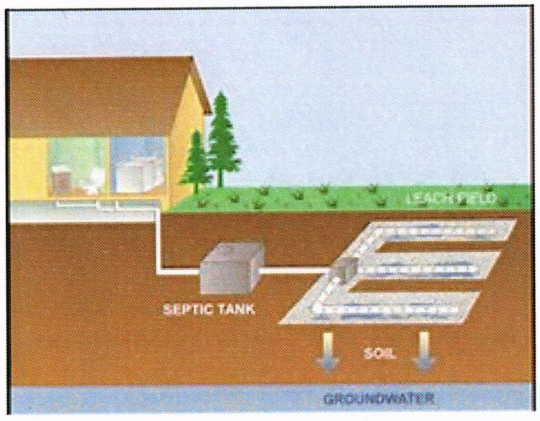
SEPTIC POLLUTION

Nearly one-fifth—approximately 21.5 million U.S. households—use septic systems. Although parasitic diseases, hormones, pharmaceutical compounds, and increased levels of nitrogen and phosphorus from these systems are compounding in our lakes and streams, there are **no federal regulations for septic systems**, and new systems are being installed daily.

Septic systems consist of a tank that receives household effluent from toilets, sinks, showers, and washing machines, a leachfield and distribution pipes to connect the system. Septic "leachate" is the liquid that remains after wastewater drains though septic solids. The liquid contains elevated concentrations of bacteria and organic compounds from waste, and other household materials.



When properly placed, functioning, and maintained, septic systems are designed to collect wastewater to neutralize contaminants before they enter ground or surface water systems. This is particularly important where ground and surface water drain to water bodies such as lakes. Decomposition of waste begins in the septic tank and ends in a leachfield after undergoing a series of treatments whereby wastewater is chemically, physically, and biologically processed to remove contaminants.

Septic systems are considered cost-effective wastewater treatment, however improper initial system design, impermeability of soil, improper soil drainage, incorrect vertical distance between the absorption field and water table, unsuitable slope, or improper maintenance may lead to system failures.

Even when properly installed and maintained, **septic systems have a finite life expectancy**—roughly 25 years depending on site conditions.

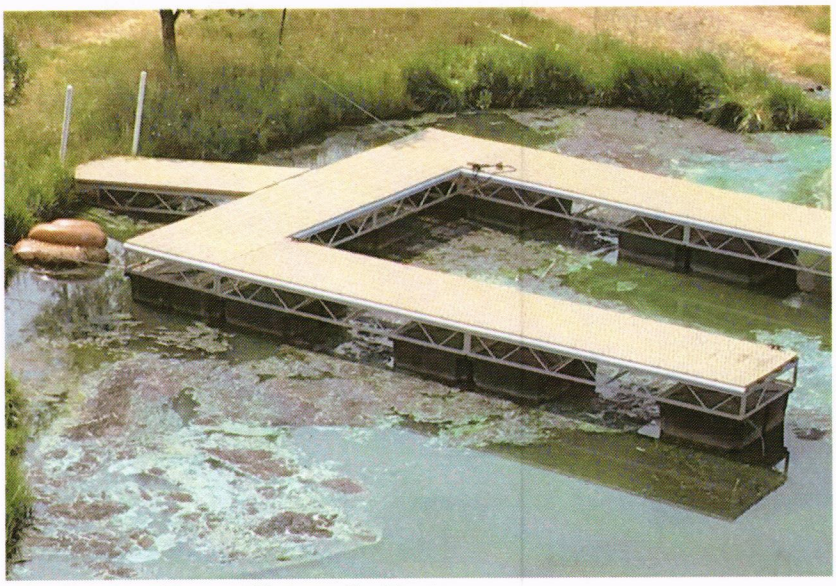
Septic leachate is **Nonpoint Source Pollution** caused by dispersed human activities. Small amounts of nonpoint source pollution, often insignificant when discharged from a few systems, develop into a serious problem as the number of systems in an area increases Reducing septic leachate pollution is difficult because individuals are responsible for their own systems.

Various studies have put the **failure rate of septic systems between 20 - 50%.** The primary response of governments to the problem of failing septic systems has been to deploy various educational programs. Studies show that these well-intended educational programs fall short of affecting meaningful change.

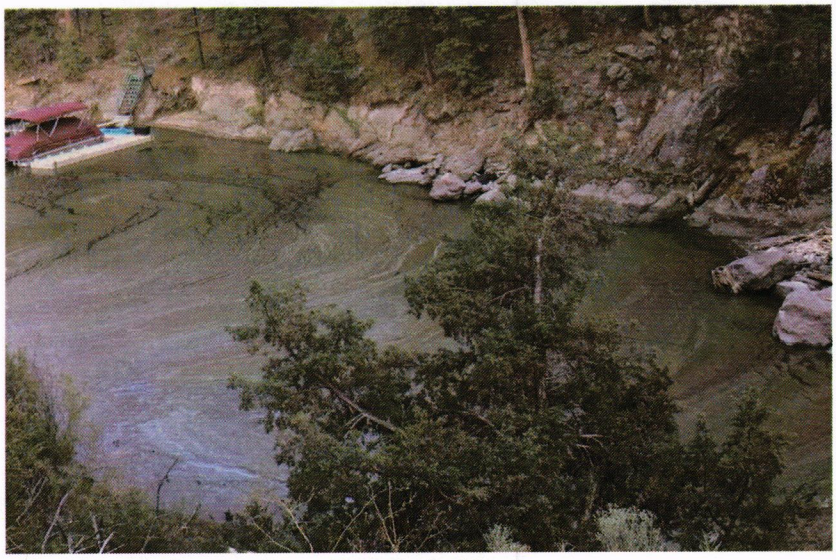
As many of the septic systems in the state are reaching, or have reached their expected lifespan, the **time is right for effective policy to protect our shared resources.**

Algal Bloom Examples in Montana

Algal bloom, Salmon Lake, Montana



Algal bloom, Hauser Reservoir, Montana



Algal bloom, Canyon Ferry Reservoir, Montana

Water Policy Interim Committee

July 17, 2018

Draft Legislation

Septic Leachate Issue

Letters of Support Packet

Whitefish Lake Institute

City of Whitefish

University of Montana Flathead Lake Biological Station

Flathead Lakers

Swan Lakers

Flathead Conservation District

Lake County Conservation District

Friends of Lake Mary Ronan

Little Bitterroot Lake Homeowner's Association

Echo Lake- Private homeowners (2)

Whitefish Lake INSTITUTE

501 (c)(3) Non-Profit Corporation

550 E. 1st St. #103
Whitefish, MT 59937

Voice: 406.862.4327
Fax: 406.862.0686

www.whitefishlake.org
info@whitefishlake.org

July 12, 2018

Sen. Pat Connell, Chair
Water Policy Interim Committee
P.O. Box 201704
Helena, MT 59620-1704

Dear Senator Connell,

The Whitefish Lake Institute (WLI) supports the Septic Study Bill forwarded to the Water Policy Interim Committee (WPIC) by the Flathead Basin Commission.

WLI focuses on scientific research and public education. We work on a number of water quality related topics ranging from baseline trend monitoring to investigating specific issues like septic leachate. In 2012, we published a study: *An Investigation of Septic Leachate to the Shoreline Area of Whitefish Lake, Montana.* Our study results found continued effects from septic pollution and echoed the results from previous researchers dating back to the early 1980s who first documented the issue.

The WLI study prompted the Whitefish City Council to address this issue. The council formed an ad-hoc Whitefish Wastewater Advisory Committee to produce a management plan. That plan incorporated a range of management options. The preferred option was to address the issue at a neighborhood level.

We have worked to resolve septic leachate at the local level for years. Even with the support of WLI and the City of Whitefish that included funding for Preliminary Engineering Reports and 20 year deferred annexation for the affected neighborhoods, we were unable to galvanize support due to complex jurisdictional, funding and other socio-political issues or misconceptions.

The state of Montana needs a template to manage this ubiquitous issue that is deleterious to many or our valued waterbodies. We need your support and leadership.

Thank you for your time and consideration on this important issue.

Sincerely,

Mike Koopal
Executive Director

P.O. Box 158 • Whitefish, MT 59937 • (406) 863-2400 • Fax: (406) 863-2419

July 16, 2018

Sen. Pat Connell, Chair
Water Policy Interim Committee
PO Box 201704
Helena, Montana 59620-1704

Subject: Septic Study Bill
Letter of Support from the City of Whitefish

Honorable Senator Connell:

Please accept this letter of support from the City of Whitefish for the proposed Septic Study Bill forwarded to the Water Policy Interim Committee by the Flathead Basin Commission. Since 2010, the City of Whitefish has partnered with the Whitefish Lake Institute to analyze the effect of septic leachate on locate area waterbodies and to identify management options that could potentially curb the rate of increased lake productivity. As you are aware, these efforts culminated in a comprehensive study that corroborated the results previous researchers concluded in the early 1980s when septic leachate was first identified as major concern for Whitefish Lake water quality.

I personally served on the ad-hoc Whitefish Wastewater Advisory Committee where we discussed and developed a range of practical solutions to address septic leachate. The City contributed significant funds to develop preliminary engineering studies for several core neighborhoods suspected of contributing septic leachate to Whitefish Lake. Unfortunately, despite a strong body of scientific evidence pointing to septic leachate as a primary contributor to increasing lake productivity, our efforts fell short largely due to multi-jurisdictional issues and public misconceptions.

We are looking to you for leadership and support as we once again attempt to address this very real issue for our community. On behalf of the City of Whitefish, I thank you for considering this important bill and for your time serving the people of Montana.

Sincerely,

John M. Muhlfeld, City Mayor

cc: Whitefish City Council

FLATHEAD LAKE BIO STATION
UNIVERSITY OF MONTANA

UNIVERSITY OF MONTANA
32125 Bio Station Ln. Polson, Montana, U.S.A. 59860
P (406) 982-3301 F (406) 982-3201
http://flbs.umt.edu/

5 July 2018

Sen. Pat Connell, Chair
Water Policy Interim Committee
P.O. Box 201704
Helena, MT 59620-1704

Dear Senator Connell:

The Flathead Lake Biological Station supports the Flathead Basin Commission's proposal for a Septic Leachate Study Bill addressing the potential impacts of septic waste on lakes within the Flathead Basin. Thank you for this opportunity to provide input.

For more than 40 years the Flathead Lake Biological Station and our long-term water quality monitoring program have provided scientific information needed for protection of the legendary water quality and clarity of Flathead Lake and lakes of the region. This work includes ongoing analyses of levels of water quality-damaging nutrients such as phosphorus (P) and nitrogen (N). It is well known that non-point sources of nutrient pollution are important contributors to water quality degradation in lakes around the world. This includes inputs of N and P from faulty, aging, and/or poorly designed or situated septic systems.

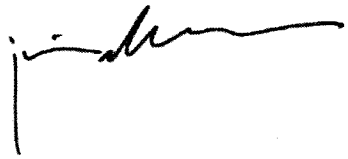
The last septic leachate study done on Flathead Lake was completed in 1999. In the 20 years since, there has been a large amount of shoreline development, and therefore more septic systems are now discharging N and P into Flathead Lake and the other lakes of the region. Additionally, unless there is documented evidence of failure, the State of Montana does not require the upgrade of old septic system to comply with current standards, even upon transfer of ownership of properties. So we know that, in addition to all the new septic systems, there are many old septic systems around our waterbodies that are not functioning properly, resulting in nutrient and biological pollution.

I share concern of others that such inputs threaten water quality here in the Flathead Basin and have potential to impact the quality of life as well as lakeshore property values in this area. The world-renowned water clarity of Flathead and other lakes in NW Montana is a major attractant of visitors and therefore a major driver of the region's economy. Declines in water quality due to the potential impacts of aging and faulty septic systems could impact the desirability of visitation and therefore associated economic benefits. This study bill could help prevent this.

Thus, I strongly support a study of septic systems in the region as well as their potential contributions to nutrient loading and biological pollution to our lakes. These data would be important in informing future decision-making about septic systems and waste disposal in the Flathead Basin.

Please let me know if you require further input or scientific information related to this topic. FLBS stands ready to serve the citizens of Montana in understanding and managing their aquatic resources.

Sincerely,



James Elser

Director, Flathead Lake Biological Station
Bierman Professor of Ecology, University of Montana
Polson, MT 59860
(406) 982-3301

P.O. Box 70 · Polson, MT 59860
(406) 883-1346
Fax (406) 883-1357
lakers@flatheadlakers.org
www.flatheadlakers.org

Flathead Lakers:
Working for clean water, a healthy ecosystem, and lasting quality of life in the Flathead Watershed

July 13, 2018

Senator Pat Connell, Chair
Water Policy Interim Committee
PO Box 201704
Helena, MT 59860-1704

Re: Support for Septic Leachate Study Bill

Dear Senator Connell and Members of the Water Policy Interim Committee:

The Flathead Lakers encourage you to support a Septic Leachate Study Bill proposed by the Flathead Basin Commission. The Flathead Lakers is a nonprofit organization working to protect water quality in Flathead Lake and its six million acre watershed. The Flathead Lakers was founded in 1958 and currently has over 1,500 members.

The Flathead Watershed's clean waters provide significant ecological and economic benefits to our communities and the state.

Flathead Lake, as well as other water bodies in the watershed, was designated impaired by Montana Department of Environmental Quality due to nutrient pollution and other pollutants. The Flathead Lakers have a long history of encouraging the various jurisdictions managing resources in the watershed to integrate information on reducing nutrient contributions provided in the state's Total Maximum Daily Load water quality reports and Watershed Restoration Plans into land use planning and resource management.

Failure or potential failure of septic systems poses a threat for public health and safety and the quality of our lakes, rivers, streams, and groundwater.

Water contamination may occur if septic systems are not functioning properly due to conditions such as flooding of a drain field (by surface or groundwater), shallow groundwater, poorly drained soils (such as clays), improper maintenance (septic tank not pumped), inadequate drain field size, drain field location too close to surface water, and using the same drain field location for too long (soil absorption in drain fields is typically exhausted after 15-30 years).

Through working with Lake County on citizen complaints of septic contamination, we learned that there are many homes that rely on septic systems that were installed prior to state permitting requirements adopted nearly 50 years ago.

Once installed, onsite septic systems are not required to be inspected again. We have repeatedly heard anecdotal information about old, inadequate, unmaintained, and failing systems. Septic system failures may go undetected or remain unreported for years, while contaminating groundwater and surface water.

Over the years, we have encountered resistance from some property owners, citizens and local governments to proposed solutions to the problem of septic leachate pollution. We believe a better understanding of the barriers causing resistance will provide useful information to help explore avenues and approaches more likely to achieve success in resolving or overcoming resistance and in building support for effective solutions.

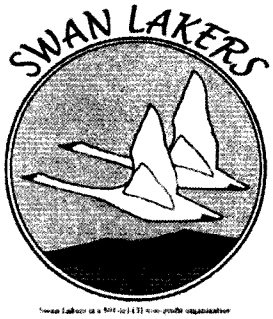
As the Flathead watershed continues to grow, it is important to protect our vital, valuable, and treasured clean waters that benefit our communities, economy, and quality of life.

Thank you for your consideration.

Sincerely,

Robin Steinkraus
Executive Director

Steve Rosso
President



July 10, 2018

To: Senator Pat Connell, Chair

Water Policy Interim Committee

P.O. Box 201704

Helena, MT 59620-1704

Subject: Septic Study Bill

Dear Senator Connell,

The Swan Lakers strongly support the proposed Septic Study Bill that will be discussed by the Water Policy Interim Committee on July 16-17. We are a non-profit organization comprised entirely of volunteers. Our mission is the protection of the water quality of Swan Lake and the Swan River watershed. We are very concerned about the effects of leachate from failing septic systems. Many of the homes surrounding Swan Lake are over 50 years old. Their septic systems are subject to failure. Our situation, to that extent, is similar to that of Flathead Lake and Whitefish Lake.

We strongly endorse moving the Septic Study Bill forward for consideration by the Montana Legislature.

Sincerely,

Jeff Kemp, Board President

Swan Lakers

Flathead Conservation District
133 Interstate Lane, Kalispell, MT 59901
www.flatheadcd.org 406-752-4220

July 9, 2018

Sen. Pat Connell, Chair
Water Policy Interim Committee
P.O. Box 201704
Helena, MT 59620-1704

Chairman Connell,

The Flathead Conservation District (FCD) supports the Septic Study Bill forwarded to the Water Policy Interim Committee by the Flathead Basin Commission.

FCD's mission is to conduct local activities to promote natural resources, including education, on-the-ground conservation projects, and administration of the 310 Law for stream permits on perennial streams. In particular, FCD supports efforts to maintain high water quality throughout the Flathead Basin, and the district recently underwent an extensive effort to write and implement a basin-wide watershed restoration plan.

In recent years, Flathead County has experienced rapid rates of growth and development that place added stress on our shared water resources. Failing septic systems are detrimental to water quality, but addressing this problem will require a comprehensive study to investigate the extent of the impacts and barriers to mitigating them. FCD supports this study because the future of Flathead County's shared waterbodies depend on our continued stewardship and leadership.

Sincerely,

Ronald Buentemeier

Ronald Buentemeier
Chair

Lake County Conservation District

64352 US Highway 93
Ronan, Montana 59864-8738

Phone: 406-676-2842, ext.102

7/16/2018

STATE OF MONTANA
Sen. Pat Connell, Chair
Water Policy Interim Committee
P.O. Box 201704
Helena, MT 59620-1704

Dear Sen. Connell,

We are writing to express the unanimous support of the Lake County Conservation District (LCCD) Board of Supervisors for the Flathead Basin Commissions Septic Leachate Study Bill.

LCCD Board members identified septic leachate, mainly coming from aging septic systems, as a key concern for water quality in our District. Presently, we have been investigating an avenue for our increased involvement in pollutant prevention efforts for landowners who have questions about their septic systems. Since this study would investigate methods to address septic waste systems impact to Flathead Basin lakes, we could use the local data to prioritize our work plan to address aged and aging septic systems in our community and be proactive in supporting non-point source pollution prevention.

This is just one of the ways that a community in the Flathead Basin can utilize this data and the recommendations from this study to make the best, most informed management decisions as well as secure funding to continue to protect water quality in the Flathead Basin water system.

Thanks,

Heidi Fleury
LCCD Conservation Coordinator on behalf of

The Lake County Conservation District Board
Chairman Jim Simpson, Supervisors; Susan Gardner, Curt Rosman, Sigurd Jensen, Zoe, Lilja and Jan Neimeyer. See July 2018 Meeting Minutes.

July 8, 2018

Friends of Lake Mary Ronan
PO Box 106
Dayton, MT 59911

Sen. Pat Connell, Chair
Water Policy Interim Committee
P.O. Box 201704
Helena, MT 59620-1704

Dear Senator Connell,

This is a letter of support for the Flathead Basin Commission's proposed Septic Leachate Study Bill to be considered by the Water Policy Interim Commission on July 16-17, 2018. The Friends of Lake Mary Ronan is a non-profit volunteer organization focused on monitoring, identifying sources of pollutants, and improving water quality for Lake Mary Ronan. We have participated in the Whitefish Institute's water quality studies for over a decade. Lake Mary Ronan is 303d listed for Chlorophil and has one of the highest phosphorous concentrations of large lakes monitored by the Whitefish Institute.

Although we have not yet performed the water quality studies that would provide actual proof of septic leachate, we are presently looking at purchasing the required equipment, or contracting with a third party to perform such a study. Given the older septic systems that exist on or near Lake Mary Ronan's shore, we are certain we will find pollutants from these sources.

We will have to address the same issues regarding septic leachate as Flathead, Echo, and Whitefish lakes, and information regarding the physical, financial, jurisdictional, and community barriers that impact reluctance of near shore residents to correct their impact on water quality would be extremely helpful. Measuring the impact of septic leachate is the easy part. Doing something about it is very complex.

Thank you for considering this proposal.

James A. Baker

James A. Baker, President
Friends of Lake Mary Ronan

Senator Pat Connell, Chair

Water Policy Interim Committee

P.O. Box 201704

Helena, Mt. 59620-1704

Dear Senator Connell,

I am writing as the representative of the Little Bitterroot Lake Association (LBLA). We are a strong and active organization that represents the best interests of our pristine lake. We work to protect Little Bitterroot Lake for future generations. Little Bitterroot Lake is spectacularly beautiful and pristine. Please come visit us anytime.

There are many challenges facing our Lake. Old septic systems are a BIG one and we need your help!

Quite frankly, we do not have the knowledge or power to deal with the current and future challenges of old septic systems failing and contaminating our lake.

As it is said, "Knowledge is Power".

Our ability to deal with the barriers to solving this issue rests with accurate intelligence and a developed protocol for fixing the problem.

We believe the proposed Septic Study Bill is just what we need...We ask for your support in moving the bill forward.

Thank you

All the best,

Dan Handlin

BOD Member

80 Bitterroot Cv.

Marion, Mt. 59925

406 854-9444

July 12, 2018

Senator Pat Connell, Chair
Water Policy Interim Committee
POB 201704
Helena , Mt 59620-1704

Dear Pat,

I'm writing you today to ask you as part of the State of Montana's public trust doctrine responsibility to protect our natural resources and in this case help protect our precious water quality. I've been a resident on Echo Lake for 30 years. I have an investment to protect; and you would think I would say my house? Not really Pat, it's the water in front of my house! If that becomes polluted I'm done with, the lake is done with. I've always been a believer that a proactive dollar spent is exactly that, a reactive spending can be ten dollars to that one!
One of my main concerns is failing septic systems on actually state land that the Montana DNRC leases out on the west side of Echo Lake.

I think it's extremely timely for the WPIC discuss and after discussing it; support and provide funding for the septic study bill that has been proposed for the Flathead Basin. Please feel free to call or email me with any questions you may have.

Thank you for attention with this important study.

John L. Wachsmuth
POB 2185
Kalispell , MT 59903
406.250,9038
JohnLWachsmuth@gmail.com

994 Echo Lake Road
Bigfork, MT 59911

Sen. Pat Connell, Chair
Water Policy Interim Committee
P.O. Box 201704
Helena, MT 59620-1704

Dear Senator Connell,

As a native Montanan and a resident of Echo Lake for over thirty years, I believe it is our duty to be good stewards of the land and resources we enjoy. I wholeheartedly support this much needed study. (see attached)

As more and more property owners looking to make a quick buck squeeze in "extra" spaces in every nook and cranny for yet another Airbnb, the natural resources are pushed to the limit. Impact and remediation must be studied and addressed before the last best place becomes the last dead space.

Thank you in advance for your attention this matter.

Sincerely,

Karen Kolar